

CLAIMS

1. A method of assigning time slots within a frame of a TDMA frequency channel to a plurality of calls between a base station and one or more mobile terminals, said calls being either real-time calls or non real-time calls and comprising at least one real-time call requiring a plurality of time slots per frame; the method comprising:

determining which of said calls are real-time calls requiring allocation of a plurality of time slots per frame; and

allocating said time slots in said frame to said calls such that the plurality of time slots allocated to the or each said real-time call are mutually spaced apart in said frame.

2. A method as claimed in claim 1, wherein said TDMA frequency channel is a forward channel for communication from said base station to said one or more mobile terminals, the method further comprising transmitting call signals in said time slots in accordance with the allocation of said time slots.

3. A method as claimed in claim 1, wherein said TDMA frequency channel is a return channel for communication from said one or more mobile terminals to said base station, the method further comprising:

transmitting to said one or more mobile terminals information relating to the allocation of said time slots in the return channel, such that call signals are transmitted by said one or more mobile terminals in said allocated slots of the return channel.

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4. A method as claimed in any preceding claim, further comprising allocating one or more time-slots to each said non-real-time call from the time slots in said frame not allocated to the or each real-time call, the number of said time slots allocated to said non-real-time call being variable during said non-real-time call according to a current bandwidth allocation determined for that non-real-time call.

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5. Apparatus for assigning time slots within a frame of a TDMA frequency channel to a plurality of calls between a base station and one or more mobile terminals, said calls being either real-time calls or non real-time calls which have less sensitivity to delay than real-time calls and comprising at least one real-time call requiring a plurality of time slots per frame; the apparatus comprising:

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means for determining which of said calls are real-time calls requiring allocation of a plurality of time slots per frame; and

means for allocating said time slots in said frame to said calls such that the plurality of time slots allocated to the or each of said real-time calls are mutually spaced apart in said frame.

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6. Apparatus as claimed in claim 5, wherein said means for allocating are further arranged to allocate one or more time-slots to each said non-real-time call from the time slots in said frame not allocated to the or each real-time call, the number of said time slots allocated to said non-real time call being variable during said non-real-time call according to a current bandwidth allocation for that non-real time call.

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7. Apparatus as claimed in claim ¹~~5~~ or ²~~6~~, further comprising means for transmitting call signals in said time slots in accordance with the allocation of said time slots.

8. A method of communication to or from a mobile terminal at a base station connected to a communications network, comprising setting up a call between a network terminal connected to the network and the mobile terminal, including determining the maximum bandwidth allocation for that call, determining a current bandwidth allocation for the call over a wireless link between the base station and the mobile terminal, and varying the current bandwidth allocation during the call in accordance with a bandwidth demand relating to the call without exceeding said maximum bandwidth allocation.

9. A method as claimed in claim 8, wherein the current bandwidth allocation includes a return bandwidth allocation, further comprising receiving a demand

signal at the base station from the mobile terminal, the return bandwidth allocation being varied in accordance with said demand signal, the method further comprising transmitting from the base station to the mobile terminal allocation data indicating the return bandwidth allocation, such that the mobile terminal uses the return bandwidth allocation for transmission to the base station.

10. A method as claimed in claim 8 or 9, wherein the current bandwidth allocation includes a forward bandwidth allocation, the forward bandwidth allocation being varied during the call in accordance with a forward channel demand relating to the call, the method further comprising transmitting from the base station to the mobile terminal using the forward bandwidth allocation.

11. A method as claimed in claim 10, wherein the forward channel demand is derived from the quantity of data received from the network terminal during the call.

12. A method as claimed in claim 10 or 11, each when dependent on claim 9, wherein the forward bandwidth allocation is determined independently of the return bandwidth allocation.

13. A method as claimed in any one of claims 8 to 12, wherein the step of establishing said call includes determining a minimum bandwidth allocation for

that call, and the current bandwidth allocation is varied without falling below said minimum bandwidth allocation.

14. Apparatus for communication between a mobile terminal and a network terminal connected to a network, comprising:

call set-up means for setting up a call between the mobile terminal and the network terminal, said call set-up means being operable to determine a maximum bandwidth allocation for that call;

means for determining a current bandwidth allocation for the call over a wireless link between the base station and the mobile terminal, and

means for varying the current bandwidth allocation during the call in accordance with a bandwidth demand relating to the call without exceeding said maximum bandwidth allocation.

15. A method of registering a communications terminal with a satellite communications system including a satellite generating a plurality of spot beams each carrying at least one spot beam transmission channel and a global beam substantially encompassing the plurality of spot beams and carrying at least one global beam reception channel and at least one global beam transmission channel, said method comprising:

receiving a call on one said spot beam transmission channel;

ceasing reception of said call;

subsequently determining whether said one spot beam transmission channel is receivable by said terminal; and,

if said one spot beam transmission channel is not receivable, transmitting a registration message in said global beam reception channel;

5 receiving a spot beam channel allocation signal in said global beam transmission channel; and

receiving a further said spot beam transmission channel selected according to said spot beam channel allocation signal.

10 16. Apparatus for a satellite communications terminal for use in a satellite communications system including a satellite generating a plurality of spot beams each carrying at least one spot beam transmission channel and a global beam substantially encompassing the plurality of spot beams and carrying at least one global beam reception channel and at least one global beam transmission channel,
15 said apparatus comprising:

a receiver for receiving a call on one of said spot beam transmission channels and subsequently ceasing reception of said call;

means for subsequently determining whether said one spot beam transmission channel is receivable by said terminal; and if said one spot beam
20 transmission channel is not receivable, transmitting a registration message in said global beam reception channel; and

means for receiving a spot beam channel allocation signal in said global beam transmission channel and tuning said receiver to receive a further said spot beam transmission channel selected according to said spot beam channel allocation signal.

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